



Volkswagen Trust
Be Part of the Solution

Missouri's Beneficiary Mitigation Plan

Missouri Department of Natural Resources

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Version 1.0

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Executive Summary

The State of Missouri is a beneficiary of the Environmental Mitigation Trust Agreement (VW Trust) resulting from a consent decree between Volkswagen AG, et al, California, and the United States. The VW Trust requires proceeds be used only for the types of environmental mitigation projects listed in the consent decree that reduce emissions of nitrogen oxide (NO_x) pollution. The Governor chose the Missouri Department of Natural Resources (Department) as the state's lead agency. The Department developed a 10-year Beneficiary Mitigation Plan for awarding the \$41,152,051.74 million in proceeds to Missouri-specific projects based on extensive stakeholder input. Plans for the proceeds, rounded to the nearest whole million dollars, are as follows:

Award Categories		Overview	Amount ¹ (Millions)
Vehicle Replacement Programs	1. School Buses	School buses with 2009 and older engines can be replaced with a new bus or engine	\$12
	2. Government Trucks	Large and medium government-owned trucks with 1992 to 2009 engine can be replaced with a new vehicle or engine	\$6
	3. Transit and Shuttle Buses	Transit and shuttle buses with 2009 and older engines can be replaced with a new bus or engine	\$4
	4. Nongovernment Trucks	Large and medium nongovernment-owned trucks with 1992 to 2009 engine can be replaced with a new vehicle or engine	\$6
	5. Locomotive and Marine	Older switchyard locomotives can be replaced or repowered; older ferries and tugs can be repowered	\$2
	6. Airport and Cargo Equipment	Older airport ground support equipment can be replaced with electric vehicles or electric engines; forklifts can be replaced with electric vehicles or electric engines	\$2
	7. DERA Option	The Department can use VW Trust funds as their non-federal voluntary match for the federal DERA program, which expands allowable project types for this category to include all DERA-eligible projects.	\$3
	8. Electric Vehicle Charging Stations	Electric vehicle charging stations can be built for light-duty vehicles near highways, workplaces, or multi-unit dwelling.	\$6

¹ If applications for eligible projects are not received for categories below the bold line, unspent award money will be equally redistributed to the three categories above the bold line.

Background

This Beneficiary Mitigation Plan provides Missouri's vision and goals for the VW Trust. The Department will submit the plan to Wilmington Trust, Inc., the trustee responsible for managing and disbursing the VW Trust fund assets to the state beneficiaries, at least 30 days prior to submitting the first funding request. A separate but related document, Missouri's Volkswagen Trust Implementation Guidelines Overview, includes processes and methods the Department will use to select and implement eligible mitigation actions to achieve the vision and goals of the Beneficiary Mitigation Plan. The Department will follow the plan and guidelines over the 10-year period of the VW Trust. If necessary, the Department may amend the plan and guidelines in the future. In the event the Department changes either document over the 10-year period, the amended document will be subject to a public review and comment process.

VW Violation

In 2016, the United States settled complaints against Volkswagen AG, et al to resolve claims that VW violated the Clean Air Act by selling approximately 590,000 vehicles with 2.0- and 3.0-liter diesel engines having emissions defeat devices. The vehicles affected are model years 2009 through 2016.

As part of their engine control modules, the vehicles contained computer algorithms and calibrations that cause emissions control systems to perform differently during emissions testing to guarantee passing scores. During normal operation, the vehicles emitted levels of NO_x that significantly exceeded the U.S. Environmental Protection Agency's (EPA) standards.

VW Settlement and VW Trust

The settlement consists of multiple agreements and requires VW to take certain actions, such as paying \$2.9 billion to a national environmental mitigation trust fund. Beneficiaries of the environmental trust fund - in this case, states - must use their shares to fund specific projects that reduce emissions of NO_x from mobile sources.

The consent decree between VW, the State of California, and the United States addresses excess NO_x emissions from 2.0- and 3.0-liter diesel vehicles. The United States District Court of the Northern District of California approved the consent decree on the Trust Effective Date of October 2, 2017. The court approved the creation of two trusts, one for Indian Tribe Beneficiaries, and one for the 50 States, Puerto Rico, and the District of Columbia. There are no Indian Tribe beneficiaries in Missouri. The VW Trust allows beneficiaries to remediate the excess NO_x emissions caused by affected VW vehicles through projects that place lower or no-emitting vehicles and engines into service. Conditions of the VW Trust include limits on the types of projects, limits on the amount and timing of funding, requirements for beneficiaries to submit a plan outlining the use of funds, and public engagement and reporting for both beneficiaries and the trustee.

The court appointed Wilmington Trust the trustee on March 15, 2017. Missouri filed its certification for beneficiary status with the U.S. District Court for the Northern District of California on October 5, 2017, which identified the Department of Natural Resources as the lead agency. The court certified the State of Missouri as a beneficiary of the VW Trust on January 29,

2018. The VW Trust agreement lists allocation amounts for each state based on the number of affected vehicles sold in each state. Missouri's allocation amounts are—

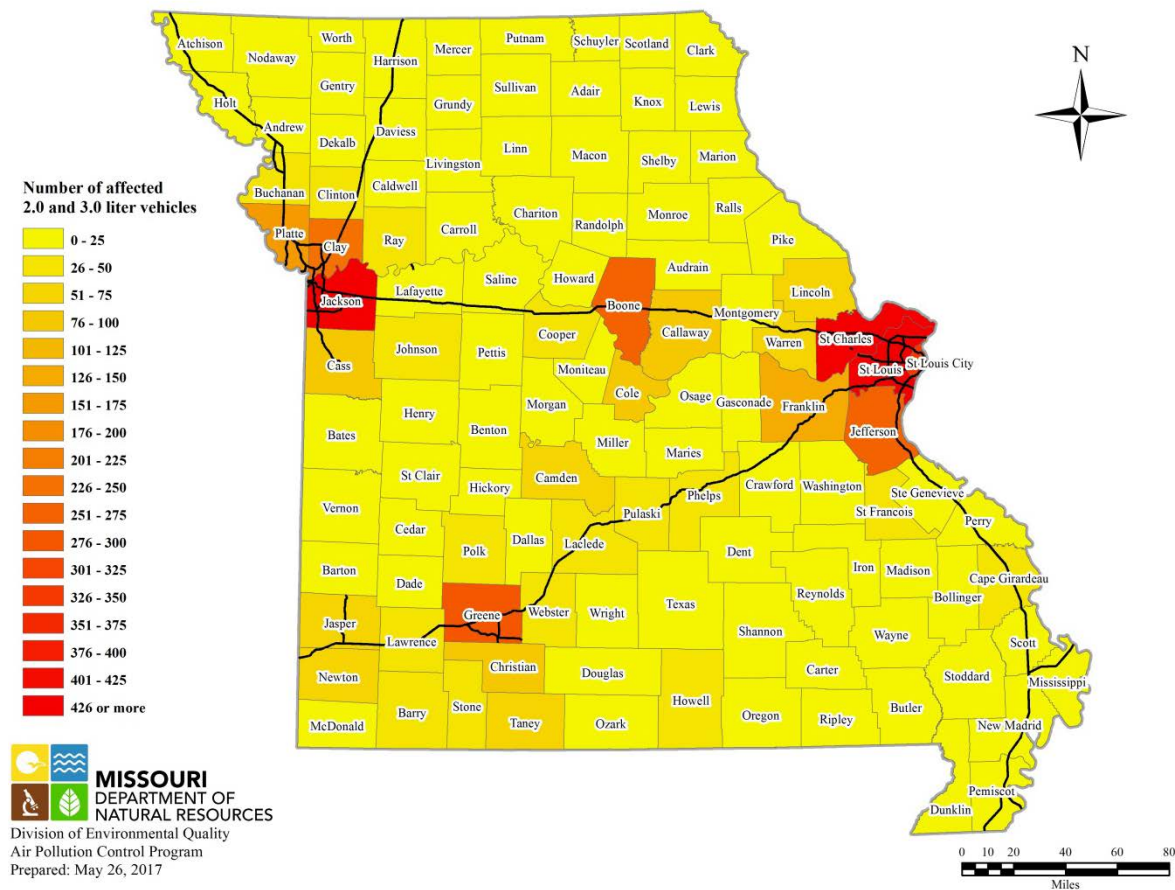
Table 1- Missouri's VW Trust Allocation

2.0 Liter Vehicle Allocation	\$ 39,084,815.55
3.0 Liter Vehicle Allocation	\$ 2,067,236.19
Total Allocation for Missouri	\$ 41,152,051.74

The allocation amounts are the starting point for states to plan mitigation actions. States have the opportunity to receive additional funds if some states choose not to, or are unable to, spend their entire allocations before the end of the 10-year trust period. The Department intends to distribute Missouri's allocation on eligible projects within the trust period, and become eligible to receive reallocated VW trust funds.

While the VW Trust allocated funds to states based on state sales of affected vehicles, the Department used registration data from the Missouri Department of Revenue to identify counties with affected 2.0-liter and 3.0-liter vehicles. Figure 1 shows registrations were concentrated in the St. Louis area and the Kansas City area. While this information does not identify where the vehicles operated, the Department considered it when determining the distribution of VW Trust funds.

Figure 1 - Affected vehicle registration by county



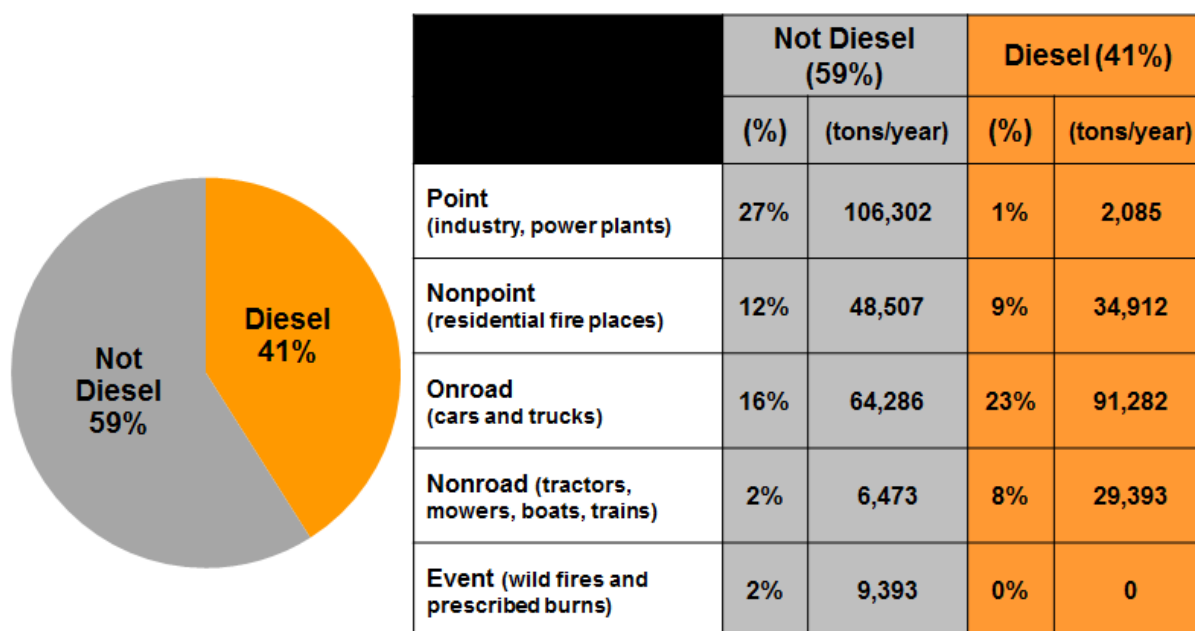
NO_x and Air Quality

The excess NO_x emitted from affected VW vehicles acts as a precursor to ozone. When NO_x and volatile organic compounds (VOCs) mix with sunlight, they produce ground-level ozone. Although naturally occurring ozone in the upper atmosphere protects Earth from harmful ultraviolet rays, exposure to ground level ozone can contribute to health and environmental problems. Ground-level ozone is an irritant that damages lung tissue and aggravates respiratory disease. The most susceptible groups include elderly people and individuals with pre-existing respiratory conditions, such as asthma or emphysema. Children also are at increased risk from exposure to ground-level ozone because their lungs are still developing. In addition, healthy adults can experience problems breathing, especially if they exercise or work outdoors.

The goal of the VW Trust is to mitigate the excess NO_x emitted by affected 2.0-liter and 3.0-liter vehicles. To put the various sources of NO_x into perspective, Figure 2 lists NO_x sources in Missouri, grouped into five broad categories, and separated by their fuel source. In general, the

largest source of NO_x is large industrial facilities burning fuel that is not diesel. Large industrial facilities emitted over 100,000 tons of NO_x, about 27 percent of the state total, in 2014 from non-diesel fuels. Of the diesel emissions total, onroad cars and trucks and nonroad vehicles like tractors, boats, and trains account for almost one third of the state's total NO_x at 32 percent. As precursors to ground-level ozone, these NO_x emissions adversely impact the population of Missouri.

Figure 2 - Missouri NO_x Sources (from EPA's 2014NEI)



Air Quality in Missouri

EPA designates areas in Missouri that do not meet the National Ambient Air Quality Standards (NAAQS) based on monitored concentrations of several pollutants, including lead, carbon monoxide, sulfur dioxide, and ozone. The pollutant of interest concerning the VW Trust is NO_x because it is a precursor to ozone formation.

EPA designated an area in and around St. Louis as nonattainment for the 2008 ozone standard. The Kansas City area historically saw concentrations exceeding previous air quality standards for ozone, but the area now meets the more stringent 2008 and 2015 ozone standards. Of the areas in the state that meet the 2015 ozone standard, the Kansas City area has the highest monitored concentrations of ozone.

Missouri's Beneficiary Mitigation Plan

The conditions of the VW Trust agreement require each beneficiary, no later than 30 days prior to submitting its first funding request, submit and make publicly available a beneficiary mitigation plan summarizing how the beneficiary intends to use the VW Trust funds. Beneficiary mitigation plans must address the following:

- (i) The beneficiary's overall goal for the use of the funds;
- (ii) The categories of eligible mitigation actions the beneficiary anticipates will be appropriate to achieve the stated goals and preliminary assessment of the percentages of funds anticipated to be used for each type of eligible mitigation action;
- (iii) A description of how the beneficiary will consider the potential beneficial impact of the selected eligible mitigation actions on air quality in areas that bear a disproportionate share of the air pollution burden within its jurisdiction; and
- (iv) A general description of the expected ranges of emission benefits the beneficiary estimates would be realized by implementation of the eligible mitigation actions identified in the Beneficiary Mitigation Plan.

The State of Missouri, as a beneficiary of the VW Trust, provides this plan to fulfill obligations under the VW Trust agreement. The Department will submit the plan to the trustee no later than 30 days prior to its first funding request and will place the plan on the state's public-facing VW Trust webpage at dnr.mo.gov/env/apcp/vw. If necessary, the Department may amend the plan and guidelines in the future. In the event the Department changes either document over the 10-year period, the amended document is subject to a public review and comment process.

Public Participation

The Department sought and considered public input on Missouri's Beneficiary Mitigation Plan by engaging with stakeholders in several ways. The Department collected public input via the Missouri Volkswagen Trust webpage beginning October 4, 2017, shortly after the VW Trust effective date of October 2, 2017. Before drafting a plan, the Department received 94 comments through the webpage and 27 comments by email through March 2018. Also before writing the draft plan, the Department held four public meetings around the state providing an overview of the VW Trust and Missouri's role as a beneficiary. The Department posted outreach materials from the meetings at dnr.mo.gov/env/apcp/vw. In addition, the Department held two VW Trust Advisory Committee meetings to gather input. The VW Trust Advisory Committee is voluntary and open to anyone with an interest. The current membership list is at dnr.mo.gov/env/apcp/vw.

Other stakeholder feedback came from two web-based survey questionnaires. These surveys asked for input on the Beneficiary Mitigation Plan elements such as overall goals, funding for projects, and air quality benefits. The survey results narrowed the focus of the plan, and the resulting

sections summarize the direction the Department is taking to implement the VW Trust via the Beneficiary Mitigation Plan.

Both Missouri's Draft Beneficiary Mitigation Plan and Volkswagen Trust Implementation Guidelines underwent a public notice and comment period prior to finalization. Specifically, the Department—

- Posted the draft mitigation plan and implementation guidelines document on the Missouri Volkswagen Trust website: dnr.mo.gov/env/apcp/vw
- Hosted an open meeting on April 20, 2018, to receive comments on the draft mitigation plan and implementation guidelines.
- Accepted public comments from April 4 to May 4, 2018, on both the draft mitigation plan and implementation guidelines. The Department received 473 comments, including 396 nearly identical letters supporting electric vehicle infrastructure.

Plan Goals

Missouri's overall goal for use of the VW Trust funds is to reduce mobile source emissions of NO_x with maximum cost-effectiveness. Additional goals include:

- Helping school districts across the state replace aging school bus fleets,
- Reducing diesel and gasoline fuel consumption,
- Supporting government-owned fleet upgrades,
- Incentivizing private-owned fleet upgrades of aging medium and heavy-duty vehicles,
- Targeting areas that currently or historically haven't met national air quality standards,
- Targeting areas of the state with high numbers of affected VW vehicles, and
- Providing infrastructure investments for the adoption of electric vehicles.

Eligible Mitigation Actions

Appendix D-2 of the consent decree describes the 10 eligible mitigation actions or projects. The VW Trust allows states to choose funding amounts with the only limitation being a maximum of 15 percent of funds allocated to light duty zero emission vehicle supply equipment. Eligible mitigation actions require scrapping of older, higher emitting equipment to ensure permanent emission reductions and no fleet growth. Appendix D-2 of the VW Trust defines minimum actions for vehicles and engines to meet scrapping requirements. *See* Appendix A of this plan for Appendix D-2 of the VW Trust Agreement.

For the ease of application and selection of individual projects, the Department groups the 10 eligible mitigation actions into eight award categories (seven vehicle replacement categories plus electric vehicle charging stations) as cross-referenced in Table 2. The subsequent Table 3 distributes Missouri's \$41 million among the award categories.

Table 2- Eligible Mitigation Actions and Award Categories

VW Trust Categories		Missouri's Categories	
Eligible Mitigation Action Number	Eligible Mitigation Action	Missouri's Award Category/Categories Name	Award Category Number
1	Class 8 Local Freight Trucks and Port Drayage Trucks (Eligible Large Trucks)	Government Trucks	2
		Nongovernment Trucks	4
2	Class 4-8 School Bus, Shuttle Bus, or Transit Bus (Eligible Buses)	School Buses	1
		Transit and Shuttle Buses	3
3	Freight Switchers	Locomotive and Marine	5
4	Ferries/Tugs	Locomotive and Marine	5
5	Ocean Going Vessels (OGV) Shorepower	Locomotive and Marine	5
6	Class 4-7 Local Freight Trucks (Medium Trucks)	Government Trucks	2
		Nongovernment Trucks	4
7	Airport Ground Support Equipment	Airport and Cargo Equipment	6
8	Forklifts and Port Cargo Handling Equipment	Airport and Cargo Equipment	6
9	Light Duty Zero Emission Vehicle Supply Equipment	Electric Vehicle Charging Stations	8
10	Diesel Emission Reduction Act (DERA) Option	DERA Option	7

Table 3- Award Categories and Funding

Award Categories		Eligible Mitigation Action Overview	Amount (Millions)
Vehicle Replacement Programs	1. School Buses	School buses with 2009 and older engines can be replaced with a new bus or engine	\$12
	2. Government Trucks	Large and medium government-owned trucks with 1992 to 2009 engine can be replaced with a new vehicle or engine	\$6
	3. Transit and Shuttle Buses	Transit and shuttle buses with 2009 and older engines can be replaced with a new bus or engine	\$4
	4. Nongovernment Trucks	Large and medium nongovernment-owned trucks with 1992 to 2009 engine can be replaced with a new vehicle or engine	\$6
	5. Locomotive and Marine	Older switchyard locomotives can be replaced or repowered; older ferries and tugs can be repowered.	\$2
	6. Airport and Cargo Equipment	Older airport ground support equipment can be replaced with electric vehicles or engines; forklifts can be replaced with electric vehicles or engines	\$2
	7. DERA Option	States can use VW Trust funds as their non-federal voluntary match for the federal DERA program, allowing project types not otherwise allowed under the VW Trust to be funded	\$3
	8. Electric Vehicle Charging Stations	Electric vehicle charging stations can be built for light duty vehicles near highways, workplaces, or multi-unit dwellings	\$6

The award categories and funding amounts in Table 3 provide guidance on the distribution of VW Trust funds in the state. The amounts planned for each category may change based on the number and types of projects applicants submit. Funding may increase for the school bus, government trucks, and transit and shuttle bus categories above the bold line if categories below the bold line receive insufficient applications and funds remain unused. The maximum funding that could be available to the award category for school buses is \$18 million, the maximum for government trucks is \$12 million, and the maximum for transit and shuttle buses is \$10 million. Missouri's Volkswagen Trust Implementation Guidelines Overview describes the process for moving amounts from one category to another. Missouri's Volkswagen Trust Implementation Guidelines Overview also—

- Details award category fund movement, cost-share, and target areas.

- Describes the schedule for funding projects over the 10-year period, including limitations on spending no more than one third of Missouri’s total allocation amount in the first year, and no more than two thirds over the first two years.
- Describes eligibility for funding across the state, for both urban and rural areas, for the various categories.

A majority of Missouri’s funds will go toward buses, including school, transit, and shuttle buses.. This focus comes from strong stakeholder support for funding school bus and transit bus replacements. Public schools, with both school-owned buses and contractor owned buses, charter schools, and private or faith-based schools will qualify for funds in the school bus award category.

A secondary focus will be on replacing both large and medium heavy-duty trucks in both government and privately owned fleets. Stakeholders support these replacements as a way to reduce NO_x emissions from the larger vehicle population.

The VW Trust allows states to fund light duty zero emission vehicle supply equipment up to 15 percent of the state’s total allocation, including electric vehicle charging equipment, or hydrogen fuel cell vehicle supply equipment. Stakeholders did not support hydrogen fuel cell vehicle supply equipment; therefore, it is not included for funding in this plan. Stakeholders overwhelmingly supported spending the maximum 15 percent on electric vehicle charging stations.

The DERA option allows beneficiaries to use VW Trust funds to supplement state grant monies from the Diesel Emissions Reduction Act. This process is called the voluntary match under the federal DERA grant program. Using VW Trust funds as a match allows states to claim additional federal DERA funds, called the “federal matching bonus,” maximizing state participation in DERA. For example, if federal DERA funds of \$250,000 are voluntarily matched with \$250,000 in VW Trust funds, the “federal matching bonus” of 50% of base funding (\$125,000) is awarded to the state. Stakeholders supported using VW Trust funds for DERA projects to ensure the “federal matching bonus” expands the number of projects funded. Projects funded using DERA funds must qualify under DERA requirements and may include projects not allowed under the other seven award categories in the plan. Examples of projects that are not eligible under the other seven award categories, but are eligible through DERA include—

- Replacements and repowers for off-road construction equipment,
- Agricultural and mining equipment,
- Energy generators,
- Line-haul (as opposed to switch) locomotives, and
- Marine vessels other than tugboats, tow boats, and ferries, such as river boats and fishing boats.

In addition, tailpipe retrofits, idle reduction equipment, and aerodynamic retrofits, are eligible for many different types of vehicles and equipment through DERA, which are not eligible projects in the other seven award categories described in this document.

The Department is allocating smaller amounts to the award categories for locomotive, marine, airport, and cargo equipment because there were fewer stakeholder comments directly supporting these projects. Despite the relatively low stakeholder support, these projects have high emission reduction potential. Therefore, these smaller funding allocations for these award categories could still result in comparatively large emission reductions, aligning with the plan’s overall goal of reducing NO_x in a cost-effective manner.

The funding allocations will achieve the stated goals of the plan as described in the following table:

Table 4- Plan Goals

Plan Goal	How Funding Allocation Meets Goal
Overall Goal – reduce NO _x in a cost-effective manner	Every eligible project that receives funding will achieve NO _x emission reductions. As stated in Missouri’s Volkswagen Trust Implementation Guidelines Overview, most award categories will have competitive scoring of applications based on how cost effectively the project reduces NO _x emissions.
Help school districts replace aging fleets	Award categories 1 and 7 allocate funds to school bus replacements. The VW Trust requires the purchase of new buses, and scrapping of a 2009 or older bus.
Encourage electric vehicle adoption	As stated in Missouri’s Volkswagen Trust Implementation Guidelines Overview, every award category, except category 8 for charging stations, will allow fleets to replace eligible vehicles and engines with all-electric replacements. Award category 8 allocates funds for electric vehicle charging stations supporting electric vehicle adoption. The VW Trust allows funding of public place, workplace, or multi-unit dwelling chargers.
Target air quality areas	Missouri’s Volkswagen Trust Implementation Guidelines Overview specifies air quality target areas and the project selection process. The Beneficial Impact section of this document generally explains target areas.
Target areas with affected VW vehicles	Missouri’s Volkswagen Trust Implementation Guidelines Overview specifies target areas with affected VW vehicles within selected award categories. The Beneficial Impact section of this document generally explains target areas.
Reduce fuel consumption	Every award category funds projects that reduce diesel and gasoline fuel consumption. New diesel repowers or replacements are likely more fuel-efficient and reduce fuel consumption. Alternative fuel or all-electric repowers or replacements directly reduce diesel and gasoline fuel consumption. Electric vehicle charging stations encourage consumers to adopt this technology and reduce diesel and gasoline fuel consumption.

Plan Goal	How Funding Allocation Meets Goal
Support government fleet upgrades	Every award category except for award category 4 will be available to government-owned fleets. In addition, award category 2 is only open to government-owned fleets.
Incentivize private fleet upgrades	Every award category except for award category 2 will be available to private fleets. In addition, award category 4 is only open to private fleets.

As defined in Appendix D-2 of the VW Trust, government is:

“... a State or local government agency (including a school district, municipality, city, county, special district, transit district, joint powers authority, or port authority, owning fleets purchased with government funds), and a tribal government or native village. The term “State” means the several States, the District of Columbia, and the Commonwealth of Puerto Rico.”

This definition will apply for projects in all categories when determining project eligibility based on government ownership.

Beneficial Impact

Consistent with the *Plan Goals*, the Beneficiary Mitigation Plan promotes the following benefits:

Improve local and regional air quality. Diesel-to-diesel and diesel-to-alternative vehicle replacements reduce NO_x emissions and have a co-benefit of reducing particulate matter (PM). These reductions reduce local exposures, while decreasing regionally transported NO_x pollution that forms ground-level ozone pollution. By reducing the region-wide NO_x concentration, the entire area can benefit from a reduction in ozone-forming precursors.

Increase the number of safe and clean school buses. School bus replacements are a specific goal in the Department’s plan for many reasons. Newer buses are safer, more fuel efficient, and require less maintenance. Emissions from newer buses are over 90 percent cleaner than the emissions of older buses. Cleaner school bus emissions mean significantly less acute exposure to concentrated diesel emissions for students and drivers.

Improve the air in areas with large numbers of sensitive individuals and those disproportionately burdened with air pollution. Sensitive populations include children, the elderly, and those with pre-existing respiratory conditions like asthma and emphysema. The plan reduces pollution for sensitive populations and those disproportionately affected by air pollution by reserving minimum funds and awarding points as part of the selection process for the following areas:

- *Areas of concentrated diesel emissions:* These areas include bus depots, railyards, ports, and industrial warehouses. The VW Trust targets the types of vehicles operated in these

areas, including buses, switcher locomotives, ferries and tugs, and medium- and heavy-duty trucks. Areas of the state with more of these concentrated diesel emission areas are St. Louis and Kansas City, where large railyards and tugboats on the Mississippi and Missouri Rivers operate. Additionally, these areas include high volumes of transit buses and large trucks due to urbanization. School buses also present areas of concentrated emissions where they load and unload passengers. The plan allocates funds to these projects to reduce emissions in these concentrated areas.

- *Areas not meeting air quality standards:* These areas affected by air pollution currently or historically have not met national air quality standards.
- *Areas with large proportions of VW vehicles:* Areas that had higher numbers of affected VW vehicles appear in Figure 1.

Emission Reduction

The VW Trust requires the beneficiary's mitigation plan include a general description of the expected ranges of emission benefits realized by the projects. Table 5 contains expected emission reductions by award category over the lifetime of the replaced vehicles and equipment.

Table 5- Estimated Emission Benefit

Award Categories		Lifetime Estimated NO_x Reduction (tons)
Vehicle Replacement Programs	1. School Buses	80-120
	2. Government Trucks	125-175
	3. Transit and Shuttle Buses	25-50
	4. Nongovernment Trucks	250-350
	5. Locomotive and Marine	400-700
	6. Airport and Cargo Equipment	100-150
	7. DERA Option	150-200
8. Electric Vehicle Charging Stations		150-200

The Department will calculate actual emission reductions based on each project implemented, the specific replaced equipment, the specific new equipment or engine, and estimated useful life of the project.

Estimates in this document assume sufficient applications for each award category, no redistribution of funds from overfunded or under-applied-for categories, median vehicle and engine ages, median emission rates, and average cost of vehicles and equipment.

Administrative Cost

The VW Trust agreement allows beneficiaries to use VW Trust funds for actual administrative expenditures associated with implementing mitigation actions. Administrative expenditures cannot exceed 15 percent of the total cost of a mitigation action. In the interest of funding as many projects as possible, the Department will strive to keep administrative costs to a minimum and expend only what is required to implement the Beneficiary Mitigation Plan. The Department anticipates spending a minimum of 2 percent, but no greater than 10 percent of the VW Trust proceeds over the life of the program.

Federal Agency Notification

The VW Trust requires the Department notify federal agencies of the availability of funds for projects. On February 28, 2018, the Department notified the Department of Interior, including the National Park Service and U.S. Fish and Wildlife Service, and the Department of Agriculture, including the Forest Service, of the availability of VW funds for locations within Missouri. The Department did not receive notice from any other federal agency of its interest in funds.

Appropriations

An appropriation is authorization granted by the legislature to state entities to spend available funds for a specific purpose. Throughout the 10-year period of the VW Trust, the Department intends to spend VW Trust funds as appropriated each state fiscal year.

The appropriations process for fiscal year 2019 ended in May 2018. The Missouri General Assembly allocated \$6.25 million to the Department for state fiscal year 2019. The Department may award projects from July 1, 2018, through June 30, 2019, up to a total of \$6.25 million dollars. This appropriation ensures the Department will not exceed the requirement that beneficiaries spend no more than one-third of their allocation in the first year, and no more than two-thirds of their allocation in the first two years of the VW Trust.

Additionally, the Missouri General Assembly appropriated \$1 million from the VW Trust to the Missouri Department of Corrections for state fiscal year 2019. Therefore, in addition to the Department's \$6.25 million appropriation to fund projects outlined in this plan in state fiscal year 2019, the Department will fund up to \$1 million of eligible mitigation actions for the Department of Corrections using the award categories in Table 3.

Appropriations may affect future funding awards. When appropriate, the Department will update this plan accordingly.

Appendix A

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APPENDIX D-2 **Eligible Mitigation Actions and Mitigation Action Expenditures**

APPENDIX D-2

ELIGIBLE MITIGATION ACTIONS AND MITIGATION ACTION EXPENDITURES

1. Class 8 Local Freight Trucks and Port Drayage Trucks (Eligible Large Trucks)

- a. Eligible Large Trucks include 1992-2009 engine model year Class 8 Local Freight or Drayage. For Beneficiaries that have State regulations that already require upgrades to 1992-2009 engine model year trucks at the time of the proposed Eligible Mitigation Action, Eligible Large Trucks shall also include 2010-2012 engine model year Class 8 Local Freight or Drayage.
- b. Eligible Large Trucks must be Scrapped.
- c. Eligible Large Trucks may be Repowered with any new diesel or Alternate Fueled engine or All-Electric engine, or may be replaced with any new diesel or Alternate Fueled or All-Electric vehicle, with the engine model year in which the Eligible Large Trucks Mitigation Action occurs or one engine model year prior.
- d. For Non-Government Owned Eligible Class 8 Local Freight Trucks, Beneficiaries may only draw funds from the Trust in the amount of:
 1. Up to 40% of the cost of a Repower with a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) engine, including the costs of installation of such engine.
 2. Up to 25% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
 3. Up to 75% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric engine.
 4. Up to 75% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.
- e. For Non-Government Owned Eligible Drayage Trucks, Beneficiaries may only draw funds from the Trust in the amount of:
 1. Up to 40% of the cost of a Repower with a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) engine, including the costs of installation of such engine.
 2. Up to 50% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.

3. Up to 75% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric engine.
 4. Up to 75% of the cost of a new all-electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.
- f. For Government Owned Eligible Class 8 Large Trucks, Beneficiaries may draw funds from the Trust in the amount of:
1. Up to 100% of the cost of a Repower with a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) engine, including the costs of installation of such engine.
 2. Up to 100% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
 3. Up to 100% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric engine.
 4. Up to 100% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.

2. Class 4-8 School Bus, Shuttle Bus, or Transit Bus (Eligible Buses)

- a. Eligible Buses include 2009 engine model year or older class 4-8 school buses, shuttle buses, or transit buses. For Beneficiaries that have State regulations that already require upgrades to 1992-2009 engine model year buses at the time of the proposed Eligible Mitigation Action, Eligible Buses shall also include 2010-2012 engine model year class 4-8 school buses, shuttle buses, or transit buses.
- b. Eligible Buses must be Scrapped.
- c. Eligible Buses may be Repowered with any new diesel or Alternate Fueled or All-Electric engine, or may be replaced with any new diesel or Alternate Fueled or All-Electric vehicle, with the engine model year in which the Eligible Bus Mitigation Action occurs or one engine model year prior.
- d. For Non-Government Owned Buses, Beneficiaries may draw funds from the Trust in the amount of:
 1. Up to 40% of the cost of a Repower with a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) engine, including the costs of installation of such engine.
 2. Up to 25% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.

3. Up to 75% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric engine.
 4. Up to 75% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.
- e. For Government Owned Eligible Buses, and Privately Owned School Buses Under Contract with a Public School District, Beneficiaries may draw funds from the Trust in the amount of:
1. Up to 100% of the cost of a Repower with a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) engine, including the costs of installation of such engine.
 2. Up to 100% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
 3. Up to 100% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric engine.
 4. Up to 100% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.

3. Freight Switchers

- a. Eligible Freight Switchers include pre-Tier 4 switcher locomotives that operate 1000 or more hours per year.
- b. Eligible Freight Switchers must be Scrapped.
- c. Eligible Freight Switchers may be Repowered with any new diesel or Alternate Fueled or All-Electric engine(s) (including Generator Sets), or may be replaced with any new diesel or Alternate Fueled or All-Electric (including Generator Sets) Freight Switcher, that is certified to meet the applicable EPA emissions standards (or other more stringent equivalent State standard) as published in the CFR for the engine model year in which the Eligible Freight Switcher Mitigation Action occurs.
- d. For Non-Government Owned Freight Switchers, Beneficiaries may draw funds from the Trust in the amount of :
 1. Up to 40% of the cost of a Repower with a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) engine(s) or Generator Sets, including the costs of installation of such engine(s).
 2. Up to 25% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) Freight Switcher.

3. Up to 75% of the cost of a Repower with a new All-Electric engine(s), including the costs of installation of such engine(s), and charging infrastructure associated with the new All-Electric engine(s).
 4. Up to 75% of the cost of a new All-Electric Freight Switcher, including charging infrastructure associated with the new All-Electric Freight Switcher.
- e. For Government Owned Eligible Freight Switchers, Beneficiaries may draw funds from the Trust in the amount of:
1. Up to 100% of the cost of a Repower with a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) engine(s) or Generator Sets, including the costs of installation of such engine(s).
 2. Up to 100% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) Freight Switcher.
 3. Up to 100% of the cost of a Repower with a new All-Electric engine(s), including the costs of installation of such engine(s), and charging infrastructure associated with the new All-Electric engine(s).
 4. Up to 100% of the cost of a new All-Electric Freight Switcher, including charging infrastructure associated with the new All-Electric Freight Switcher.

4. Ferries/Tugs

- a. Eligible Ferries and/or Tugs include unregulated, Tier 1, or Tier 2 marine engines.
- b. Eligible Ferry and/or Tug engines that are replaced must be Scrapped.
- c. Eligible Ferries and/or Tugs may be Repowered with any new Tier 3 or Tier 4 diesel or Alternate Fueled engines, or with All-Electric engines, or may be upgraded with an EPA Certified Remanufacture System or an EPA Verified Engine Upgrade.
- d. For Non-Government Owned Eligible Ferries and/or Tugs, Beneficiaries may only draw funds from the Trust in the amount of:
 1. Up to 40% of the cost of a Repower with a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) engine(s), including the costs of installation of such engine(s).
 2. Up to 75% of the cost of a Repower with a new All-Electric engine(s), including the costs of installation of such engine(s), and charging infrastructure associated with the new All-Electric engine(s).

- e. For Government Owned Eligible Ferries and/or Tugs, Beneficiaries may draw funds from the Trust in the amount of:
 - 1. Up to 100% of the cost of a Repower with a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) engine(s), including the costs of installation of such engine(s).
 - 2. Up to 100% of the cost of a Repower with a new All-Electric engine(s), including the costs of installation of such engine(s), and charging infrastructure associated with the new All-Electric engine(s).

5. Ocean Going Vessels (OGV) Shorepower

- a. Eligible Marine Shorepower includes systems that enable a compatible vessel's main and auxiliary engines to remain off while the vessel is at berth. Components of such systems eligible for reimbursement are limited to cables, cable management systems, shore power coupler systems, distribution control systems, and power distribution. Marine shore power systems must comply with international shore power design standards (ISO/IEC/IEEE 80005-1-2012 High Voltage Shore Connection Systems or the IEC/PAS 80005-3:2014 Low Voltage Shore Connection Systems) and should be supplied with power sourced from the local utility grid. Eligible Marine Shorepower includes equipment for vessels that operate within the Great Lakes.
- b. For Non-Government Owned Marine Shorepower, Beneficiaries may only draw funds from the Trust in the amount of up to 25% for the costs associated with the shore-side system, including cables, cable management systems, shore power coupler systems, distribution control systems, installation, and power distribution components.
- c. For Government Owned Marine Shorepower, Beneficiaries may draw funds from the Trust in the amount of up to 100% for the costs associated with the shore-side system, including cables, cable management systems, shore power coupler systems, distribution control systems, installation, and power distribution components.

6. Class 4-7 Local Freight Trucks (Medium Trucks)

- a. Eligible Medium Trucks include 1992-2009 engine model year class 4-7 Local Freight trucks, and for Beneficiaries that have State regulations that already require upgrades to 1992-2009 engine model year trucks at the time of the proposed Eligible Mitigation Action, Eligible Trucks shall also include 2010-2012 engine model year class 4-7 Local Freight trucks.
- b. Eligible Medium Trucks must be Scrapped.

- c. Eligible Medium Trucks may be Repowered with any new diesel or Alternate Fueled or All-Electric engine, or may be replaced with any new diesel or Alternate Fueled or All-Electric vehicle, with the engine model year in which the Eligible Medium Trucks Mitigation Action occurs or one engine model year prior.
- d. For Non-Government Owned Eligible Medium Trucks, Beneficiaries may draw funds from the Trust in the amount of:
 - 1. Up to 40% of the cost of a Repower with a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) engine, including the costs of installation of such engine.
 - 2. Up to 25% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
 - 3. Up to 75% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric engine.
 - 4. Up to 75% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.
- e. For Government Owned Eligible Medium Trucks, Beneficiaries may draw funds from the Trust in the amount of:
 - 1. Up to 100% of the cost of a Repower with a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) engine, including the costs of installation of such engine.
 - 2. Up to 100% of the cost of a new diesel or Alternate Fueled (e.g., CNG, propane, Hybrid) vehicle.
 - 3. Up to 100% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric engine.
 - 4. Up to 100% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.

7. Airport Ground Support Equipment

- a. Eligible Airport Ground Support Equipment includes:
 - 1. Tier 0, Tier 1, or Tier 2 diesel powered airport ground support equipment; and
 - 2. Uncertified, or certified to 3 g/bhp-hr or higher emissions, spark ignition engine powered airport ground support equipment.
- b. Eligible Airport Ground Support Equipment must be Scrapped.

- c. Eligible Airport Ground Support Equipment may be Repowered with an All-Electric engine, or may be replaced with the same Airport Ground Support Equipment in an All-Electric form.
- d. For Non-Government Owned Eligible Airport Ground Support Equipment, Beneficiaries may only draw funds from the Trust in the amount of:
 - 1. Up to 75% of the cost of a Repower with a new All-Electric engine, including costs of installation of such engine, and charging infrastructure associated with such new All-Electric engine.
 - 2. Up to 75% of the cost of a new All-Electric Airport Ground Support Equipment, including charging infrastructure associated with such new All-Electric Airport Ground Support Equipment.
- e. For Government Owned Eligible Airport Ground Support Equipment, Beneficiaries may draw funds from the Trust in the amount of:
 - 1. Up to 100% of the cost of a Repower with a new All-Electric engine, including costs of installation of such engine, and charging infrastructure associated with such new All-Electric engine.
 - 2. Up to 100% of the cost of a new All-Electric Airport Ground Support Equipment, including charging infrastructure associated with such new All-Electric Airport Ground Support Equipment.

8. Forklifts and Port Cargo Handling Equipment

- a. Eligible Forklifts includes forklifts with greater than 8000 pounds lift capacity.
- b. Eligible Forklifts and Port Cargo Handling Equipment must be Scrapped.
- c. Eligible Forklifts and Port Cargo Handling Equipment may be Repowered with an All-Electric engine, or may be replaced with the same equipment in an All-Electric form.
- d. For Non-Government Owned Eligible Forklifts and Port Cargo Handling Equipment, Beneficiaries may draw funds from the Trust in the amount of:
 - 1. Up to 75% of the cost of a Repower with a new All-Electric engine, including costs of installation of such engine, and charging infrastructure associated with such new All-Electric engine.
 - 2. Up to 75% of the cost of a new All-Electric Forklift or Port Cargo Handling Equipment, including charging infrastructure associated with such new All-Electric Forklift or Port Cargo Handling Equipment.
- e. For Government Owned Eligible Forklifts and Port Cargo Handling Equipment, Beneficiaries may draw funds from the Trust in the amount of:

1. Up to 100% of the cost of a Repower with a new All-Electric engine, including costs of installation of such engine, and charging infrastructure associated with such new All-Electric engine.
 2. Up to 100% of the cost of a new All-Electric Forklift or Port Cargo Handling Equipment, including charging infrastructure associated with such new All-Electric Forklift or Port Cargo Handling Equipment.
9. Light Duty Zero Emission Vehicle Supply Equipment. Each Beneficiary may use up to fifteen percent (15%) of its allocation of Trust Funds on the costs necessary for, and directly connected to, the acquisition, installation, operation and maintenance of new light duty zero emission vehicle supply equipment for projects as specified below. Provided, however, that Trust Funds shall not be made available or used to purchase or rent real-estate, other capital costs (e.g., construction of buildings, parking facilities, etc.) or general maintenance (i.e., maintenance other than of the Supply Equipment).
 - a. Light duty electric vehicle supply equipment includes Level 1, Level 2 or fast charging equipment (or analogous successor technologies) that is located in a public place, workplace, or multi-unit dwelling and is not consumer light duty electric vehicle supply equipment (i.e., not located at a private residential dwelling that is not a multi-unit dwelling).
 - b. Light duty hydrogen fuel cell vehicle supply equipment includes hydrogen dispensing equipment capable of dispensing hydrogen at a pressure of 70 megapascals (MPa) (or analogous successor technologies) that is located in a public place.
 - c. Subject to the 15% limitation above, each Beneficiary may draw funds from the Trust in the amount of:
 1. Up to 100% of the cost to purchase, install and maintain eligible light duty electric vehicle supply equipment that will be available to the public at a Government Owned Property.
 2. Up to 80% of the cost to purchase, install and maintain eligible light duty electric vehicle supply equipment that will be available to the public at a Non-Government Owned Property.
 3. Up to 60% of the cost to purchase, install and maintain eligible light duty electric vehicle supply equipment that is available at a workplace but not to the general public.
 4. Up to 60% of the cost to purchase, install and maintain eligible light duty electric vehicle supply equipment that is available at a multi-unit dwelling but not to the general public.

5. Up to 33% of the cost to purchase, install and maintain eligible light duty hydrogen fuel cell vehicle supply equipment capable of dispensing at least 250 kg/day that will be available to the public.
 6. Up to 25% of the cost to purchase, install and maintain eligible light duty hydrogen fuel cell vehicle supply equipment capable of dispensing at least 100 kg/day that will be available to the public.
10. Diesel Emission Reduction Act (DERA) Option. Beneficiaries may use Trust Funds for their non-federal voluntary match, pursuant to Title VII, Subtitle G, Section 793 of the DERA Program in the Energy Policy Act of 2005 (codified at 42 U.S.C. § 16133), or Section 792 (codified at 42 U.S.C. § 16132) in the case of Tribes, thereby allowing Beneficiaries to use such Trust Funds for actions not specifically enumerated in this Appendix D-2, but otherwise eligible under DERA pursuant to all DERA guidance documents available through the EPA. Trust Funds shall not be used to meet the non-federal mandatory cost share requirements, as defined in applicable DERA program guidance, of any DERA grant.

Eligible Mitigation Action Administrative Expenditures

For any Eligible Mitigation Action, Beneficiaries may use Trust Funds for actual administrative expenditures (described below) associated with implementing such Eligible Mitigation Action, but not to exceed 15% of the total cost of such Eligible Mitigation Action. The 15% cap includes the aggregated amount of eligible administrative expenditures incurred by the Beneficiary and any third-party contractor(s).

1. Personnel including costs of employee salaries and wages, but not consultants.
2. Fringe Benefits including costs of employee fringe benefits such as health insurance, FICA, retirement, life insurance, and payroll taxes.
3. Travel including costs of Mitigation Action-related travel by program staff, but does not include consultant travel.
4. Supplies including tangible property purchased in support of the Mitigation Action that will be expensed on the Statement of Activities, such as educational publications, office supplies, etc. Identify general categories of supplies and their Mitigation Action costs.
5. Contractual including all contracted services and goods except for those charged under other categories such as supplies, construction, etc. Contracts for evaluation and consulting services and contracts with sub-recipient organizations are included.
6. Construction including costs associated with ordinary or normal rearrangement and alteration of facilities.
7. Other costs including insurance, professional services, occupancy and equipment leases, printing and publication, training, indirect costs, and accounting.

Definitions/Glossary of Terms

“Airport Ground Support Equipment” shall mean vehicles and equipment used at an airport to service aircraft between flights.

“All-Electric” shall mean powered exclusively by electricity provided by a battery, fuel cell, or the grid.

“Alternate Fueled” shall mean an engine, or a vehicle or piece of equipment that is powered by an engine, which uses a fuel different from or in addition to gasoline fuel or diesel fuel (e.g., CNG, propane, diesel-electric Hybrid).

“Certified Remanufacture System or Verified Engine Upgrade” shall mean engine upgrades certified or verified by EPA or CARB to achieve a reduction in emissions.

“Class 4-7 Local Freight Trucks (Medium Trucks)” shall mean trucks, including commercial trucks, used to deliver cargo and freight (e.g., courier services, delivery trucks, box trucks moving freight, waste haulers, dump trucks, concrete mixers) with a Gross Vehicle Weight Rating (GVWR) between 14,001 and 33,000 lbs.

“Class 4-8 School Bus, Shuttle Bus, or Transit Bus (Buses)” shall mean vehicles with a Gross Vehicle Weight Rating (GVWR) greater than 14,001 lbs. used for transporting people. See definition for School Bus below.

“Class 8 Local Freight, and Port Drayage Trucks (Eligible Large Trucks)” shall mean trucks with a Gross Vehicle Weight Rating (GVWR) greater than 33,000 lbs. used for port drayage and/or freight/cargo delivery (including waste haulers, dump trucks, concrete mixers).

“CNG” shall mean Compressed Natural Gas.

“Drayage Trucks” shall mean trucks hauling cargo to and from ports and intermodal rail yards.

“Forklift” shall mean nonroad equipment used to lift and move materials short distances; generally includes tines to lift objects. Eligible types of forklifts include reach stackers, side loaders, and top loaders.

“Freight Switcher” shall mean a locomotive that moves rail cars around a rail yard as compared to a line-haul engine that moves freight long distances.

“Generator Set” shall mean a switcher locomotive equipped with multiple engines that can turn off one or more engines to reduce emissions and save fuel depending on the load it is moving.

“Government” shall mean a State or local government agency (including a school district, municipality, city, county, special district, transit district, joint powers authority, or port authority, owning fleets purchased with government funds), and a tribal government or native village. The term “State” means the several States, the District of Columbia, and the Commonwealth of Puerto Rico.

“Gross Vehicle Weight Rating (GVWR)” shall mean the maximum weight of the vehicle, as specified by the manufacturer. GVWR includes total vehicle weight plus fluids, passengers, and cargo.

Class 1: < 6000 lb.
Class 2: 6001-10,000 lb.
Class 3: 10,001-14,000 lb.
Class 4: 14,001-16,000 lb.
Class 5: 16,001-19,500 lb.
Class 6: 19,501-26,000 lb.
Class 7: 26,001-33,000 lb.
Class 8: > 33,001 lb.

“Hybrid” shall mean a vehicle that combines an internal combustion engine with a battery and electric motor.

“Infrastructure” shall mean the equipment used to enable the use of electric powered vehicles (e.g., electric vehicle charging station).

“Intermodal Rail Yard” shall mean a rail facility in which cargo is transferred from drayage truck to train or vice-versa.

“Port Cargo Handling Equipment” shall mean rubber-tired gantry cranes, straddle carriers, shuttle carriers, and terminal tractors, including yard hostlers and yard tractors that operate within ports.

“Plug-in Hybrid Electric Vehicle (PHEV)” shall mean a vehicle that is similar to a Hybrid but is equipped with a larger, more advanced battery that allows the vehicle to be plugged in and recharged in addition to refueling with gasoline. This larger battery allows the car to be driven on a combination of electric and gasoline fuels.

“Repower” shall mean to replace an existing engine with a newer, cleaner engine or power source that is certified by EPA and, if applicable, CARB, to meet a more stringent set of engine emission standards. Repower includes, but is not limited to, diesel engine replacement with an engine certified for use with diesel or a clean alternate fuel, diesel engine replacement with an electric power source (e.g., grid, battery), diesel engine replacement with a fuel cell, diesel engine replacement with an electric generator(s) (genset), diesel engine upgrades in Ferries/Tugs with an EPA Certified Remanufacture System, and/or diesel engine upgrades in Ferries/Tugs with an EPA Verified Engine Upgrade. All-Electric and fuel cell Repowers do not require EPA or CARB certification.

“School Bus” shall mean a Class 4-8 bus sold or introduced into interstate commerce for purposes that include carrying students to and from school or related events. May be Type A-D.

“Scrapped” shall mean to render inoperable and available for recycle, and, at a minimum, to specifically cut a 3-inch hole in the engine block for all engines. If any Eligible Vehicle will be replaced as part of an Eligible project, Scrapped shall also include the disabling of the chassis by cutting the vehicle’s frame rails completely in half.

“Tier 0, 1, 2, 3, 4” shall refer to corresponding EPA engine emission classifications for nonroad, locomotive, and marine engines.

“Tugs” shall mean dedicated vessels that push or pull other vessels in ports, harbors, and inland waterways (e.g., tugboats and towboats).

“Zero Emission Vehicle (ZEV)” shall mean a vehicle that produces no emissions from the on-board source of power (e.g., All-Electric or hydrogen fuel cell vehicles).